

1 What is claimed is:

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3 1. An apparatus for controlling a door of a drum type washing machine,
4 comprising:

5 a water level sensor sensing a water level of water held in a washing tub;

6 a door lock locking/unlocking the door;

7 a control unit judging whether to open or close the door according to the water level
8 in the washing tub and controlling the door lock according to the judgment; and

9 a display unit displaying whether to open or close the door to a user.
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11 2. The apparatus as claimed in claim 1, wherein the control unit compares the
12 water level in the washing tub to a reference to judge whether to open the door.
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14 3. The apparatus as claimed in claim 2, wherein if the water level in the
15 washing tub is higher than the reference, the control unit judges that it is impossible to open
16 the door and wherein if the water level in the washing tub is lower than the reference, the
17 control unit judges that the door can be opened.
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19 4. The apparatus as claimed in claim 1, further comprising:
20 a door open button of inputting a command of the user intending to open the door;
21 and

22 an alarming unit making an alarm sound if the control unit judges not to open the
23 door when the command is inputted.
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25 5. The apparatus as claimed in claim 1, wherein the display unit further displays
26 a lock/unlock status of the door.

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28 6. A method of controlling a door of a drum type washing machine, comprising
29 the steps of:

30 sensing a water level in a washing tub;

31 comparing the sensed water level to a reference; and

32 locking or unlocking the door according to a result of the comparing step.

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34 7. The method as claimed in claim 6, wherein the door is locked if the sensed
35 water level is higher than the reference and wherein the door is unlocked if the sensed water
36 level is lower than the reference.

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38 8. The method as claimed in claim 6, further comprising the step of displaying a
39 lock/unlock status of the door.

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41 9. The method as claimed in claim 6, further comprising the step of checking
42 whether power is applied to the washing machine.

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44 10. The method as claimed in claim 9, wherein if the power is not applied, the
45 door is locked and wherein if the power is applied, it is checked whether the washing tub is
46 rotating.

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48 11. The method as claimed in claim 10, wherein if the washing tub is rotating,

49 the door is locked and wherein if the washing tub is not rotating, the water level in the
50 washing tub is sensed.

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52 12. The method as claimed in claim 9, wherein if the power is not applied, the
53 door is locked and wherein if the power is applied, the water level in the washing tub is
54 sensed.

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56 13. An apparatus for controlling a door of a drum type washing machine,
57 comprising:

58 a motor sensor sensing a motor for driving a washing tub;
59 a water level sensor sensing a water level of water held in the washing tub;
60 a door lock locking/unlocking the door;
61 a control unit controlling the door lock to lock/unlock the door according to the water
62 level in the washing tub in case that a user's command for opening the door is inputted to the
63 washing machine; and
64 a display unit displaying a lock/unlock status of the door.

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66 14. The apparatus as claimed in claim 13, wherein the control unit compares the
67 water level in the washing tub to a reference to determine whether to open the door.

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69 15. The apparatus as claimed in claim 14, wherein if the water level in the
70 washing tub is higher than the reference, the control unit locks the door and wherein if the
71 water level in the washing tub is lower than the reference, the control unit unlocks the door.

73 16. A method of controlling a door of a drum type washing machine, comprising
74 the steps of:

75 receiving a user's command for opening the door;
76 checking whether a power is applied to the washing machine;
77 unlocking the door if the power is not applied or checking whether water exists in a
78 washing tub if the power is applied;
79 unlocking the door if the water fails to exist in the washing tub or sensing a water
80 level in the washing tub if the water exists in the washing tub; and
81 locking or unlocking the door according to the sensed water level.

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83 17. The method as claimed in claim 16, wherein the sensed water level is
84 compared to a reference to determine whether to lock or unlock the door.

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86 18. The method as claimed in claim 17, wherein the door is locked if the sensed
87 water level is higher than the reference and wherein the door is unlocked if the sensed water
88 level is lower than the reference.

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90 19. The method as claimed in claim 16, further comprising the step of displaying
91 a lock/unlock status of the door.

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93 20. The method as claimed in claim 16, further comprising the step of checking
94 checked whether the washing tub is rotating if the power is applied.

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96 21. The method as claimed in claim 19, wherein if the washing tub is rotating,

97 the door is locked and wherein if the washing tub is not rotating, the water level in the
98 washing tub is sensed.

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